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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

December 11, 1996

MEMORANDUM

SUBJECT: Review of Field Sampling Plan (FSP) for Victoria Golf Course, Carson, California (Quality Assurance (QA) Program Document Control Number ZZCA090S96VSF3)

FROM: David R. Taylor, Ph.D., Chemist
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TO: Rachel Loftin, Site Assessment Manager
States Planning and Assessment Section, SFD-5

12-13-96

Revised pages of the subject Field Sampling Plan (FSP), prepared by the California Department of Toxic Substances Control (DTSC), Region 4, and dated December 6, 1996, were reviewed. The review was based on guidance provided in "Preparation of a U.S. EPA Region 9 Field Sampling Plan for EPA-Lead Superfund Projects," August 1993 (9QA-05-93) and on Quality Assurance (QA) Program comments provided to DTSC in a telephone conversation on September 18th and in a memorandum dated December 3rd, 1996.

DTSC indicates that a partially revised FSP and revised figures were provided to EPA separately. These documents were not available to the QA Program for review. In the future, it is recommended that a revised final FSP be submitted for review. Furthermore, the revised pages were received after 3 o'clock on Friday, December 6th, with the anticipated sampling to start the following Monday. This does not allow sufficient time for a complete review, discussions concerning unresolved issues, and release of laboratory assignments. It is recommended that the final FSP be submitted at least a week prior to sampling.

We received QAMS Comments on Dec 4.

The issues raised previously relevant to data quality have all been addressed with one exception, which concerns sampling locations. This issue is discussed below. Several non-data generation issues were not addressed, but FSP approval is not contingent on their resolution. The FSP is approved. Comments from the December 3 memorandum are reproduced below in boldface

type. An evaluation of the revised sections of the FSP follow in normal type.

Major Concerns

1. [General] **Considering the high probability of cross-contamination between sites in this location; the exact role and location of background samples in this study should be discussed.**

   DTSC, in its cover memorandum acknowledges that a large number of sites are in the area which may contribute to groundwater contamination. The response discusses the role of "background" samples in the study which is primarily to discern differences with up-gradient and down-gradient data. This comment has been satisfactorily addressed.

2. [Section 3.3, Sampling Recommendations] **Please include a review of the existing monitoring wells for their appropriateness to this sampling effort. Parameters which should be reviewed and documented include depth, screening interval, survey date, diameter, depth to groundwater and recharge rate.**

   Data are provided on the existing groundwater wells. This comment has been satisfactorily addressed.

3. [Section 3.3.1, Soil Sampling] **Sampling points 6 and 7 are referenced as "soil samples only." As these samples are in the center of the study area, and, therefore, most likely to be positive, a rationale should be presented which supports the lack of sampling for groundwater. Evaluating groundwater contamination and attribution are the stated purpose of this sampling event.**

   The information provided as well as discussions with DTSC personnel indicate that several factors were considered in the decision not to sample all locations for groundwater, including cost, potential time delays, and the relatively close proximity of other groundwater sampling locations.

   The QA Program still recommends the collection of a groundwater sample at location 7, since this appears to be strategically located in the middle of the site. The QA Program agrees with DTSC that because wells on all sides of the site (except to the East where groundwater is unlikely to be flowing) will be sampled, it should be possible to determine the direction of groundwater flow. The groundwater flow direction should enable the contaminant contributions to or from the site to be assessed with some

degree of certainty. However, if groundwater flow directions are ambiguous as predicted by the QA program, contaminant attribution to and from the site may be more difficult without groundwater data from site 7.

4. [Section 3.2, HRS Pathways] **The entire air section is not clear, and needs to be expanded to better explain the purpose and rationale for its inclusion in the FSP. In this section air is mentioned as a possible pathway, however, no testing is planned because, "PW and SWM tests for subsurface methane at the site." The relationship between methane and other possible gases is not apparent from the this passage. DTSC may wish to forgo air testing at this time, while reserving the possibility of later testing. If the intent is to eliminate the air pathway due to current methane testing, then an additional explanation of the rational behind the decision should be included in the document.**

Air testing and air as a possible pathway are no longer being investigated. This comment no longer applies.

5A. [Section 5.2.3.2, Purging] **To give accurate analyses it is recommended that all piezometers be purged prior to sampling.**

The revised FSP indicates that the piezometers will be purged. This comment has been satisfactorily addressed.

5B. **The use of bailers to acquire samples should be justified. While there is no policy that states that the use of bailers should be avoided, the use of bailers for collecting volatile organic compound samples is discouraged. The surging and disturbance of the water column when using bailers causes volatilization of volatile organic compounds to occur.**

The FSP now includes considerable discussion concerning the sampling of wells, and documents the difficulty in using either a submersible pump (well diameter size) or a peristaltic pump (groundwater too deep). This comment has been satisfactorily addressed.

Other Concerns

1. [General] **Although the determination of groundwater flow direction will be determined as part of this study, all figures should show the presumed groundwater flow direction.**

Although the overall presumed groundwater flow direction is described in the text, revised figures were not submitted to the QA Program for review. This issue is not considered critical to data quality.

2. [Section 2.4.1, Soil Sampling] **Historical soil sampling is referenced for this site. To help assist in the current sampling effort, the previous sampling effort should be documented for number of samples, depths, types of analyses and results. This information should be presented using maps and a tabular format to better evaluate the current sampling effort.**

No revised pages for this section were submitted for review. Section 3.2.1 also alludes to previous sampling; "to an unknown degree of accuracy and hazardous substances have been detected. Soils have been found to contain metals, volatile organic compounds (VOCs) and semivolatile compounds (SVOCs)." It is still recommended that the requested information, to the extent it is available, be documented in the FSP.

3. [Section 3.2, HRS Pathways] **The last sentence for "Soil" states the following: "Soils have been found to contain metals, VOCs, and SVOCs above regulatory standards." Please state the regulatory standards which have been exceeded.**

This comment has not been addressed.

4. [Section 3.3, HRS Pathways: Site Geologic and Hydrologic Conditions] **There is no mention of a cap or surface liner for the site. Any backfill or cover will affect the soil sampling depth for this investigation. As soil sampling is going to occur at this site, sampling protocols should address this aspect of sampling procedures.**

Information on the cover or backfill is indicated as being undocumented. Personal contacts indicate a five foot depth. The FSP indicates that field operations will be adjusted to avoid sampling fill. This comment has been adequately addressed.

5. [Section 3.3.2, Stratigraphic Survey] **It is stated that cone penetrometer test (CPT) will be used to a depth of 100 feet or until equipment refusal. No procedure for sampling is outlined for refusal if it occurs before reaching ground water. Please outline a course of action for the field team under refusal conditions. Refusal is referenced several times in the course of the text. A similar procedure should be in place for all incidents of refusal.**

This comment was not addressed.

Comments

1A. [General] **Chapter headings in the Table of Contents do not agree with the chapter headings in the body of the text.**

Since the overall FSP was not submitted for review, overall numbering could not be evaluated. This comment has no impact on data quality.

1B. **The numbering sequence is incomplete with some sections given no sequence identification. Such as the section Soil on page 10 and Groundwater on page 11. The sequencing should be made consistent.**

These sections are now numbered. Since the overall FSP was not submitted for review, overall numbering could not be evaluated.

1C. **The numbering sequence for chapter headings is not in order and should be corrected. Please see Sections 5.2 through Section 5.3 on pages 15 through 19.**

Since the overall FSP was not submitted for review, overall numbering could not be evaluated. This comment has no impact on data quality.

If you have any questions you can reach Michael Mahoney at (415) 744-1495 or Dave Taylor at (415) 744-1497.